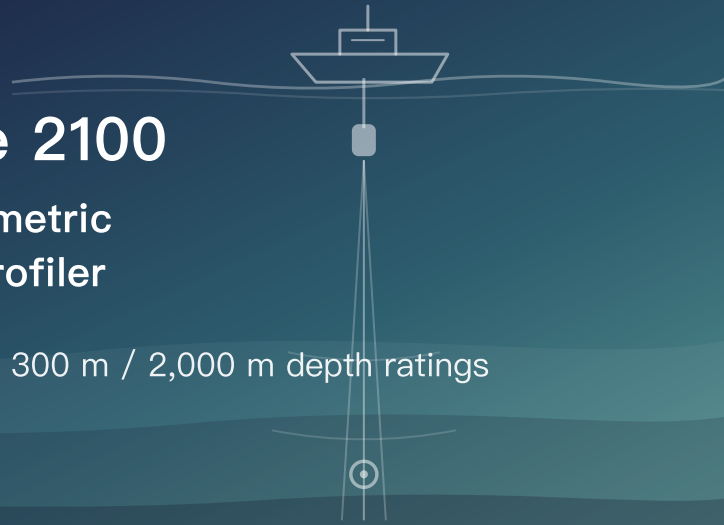




GeoScope 2100

Compact Parametric Sub-bottom Profiler

GeoScope Series · 300 m / 2,000 m depth ratings



Description

GeoScope 2100 is a compact parametric sub-bottom profiler with transducer and processing electronics in a single housing, offered in 300 m and 2,000 m depth ratings. Built on nonlinear acoustics, it transmits at a 110 kHz primary frequency and generates 5 — 25 kHz secondary frequencies in the water — low-frequency penetration without a low-frequency-sized transducer.

There is no separate electronics bottle to mount or cable. **The unit delivers up to 30 m of sediment penetration and ≤ 0.05 m range resolution** at 7.5 kg in water and ≤ 100 W average power — a size, weight and power (SWaP) profile that fits USVs and small to mid-size AUVs and ROVs where payload space and buoyancy trim are tight. Typical work: buried-target search and fine sub-bottom structure.

Application

- ▶ Route survey and tracking of buried subsea cables and pipelines
- ▶ Sediment thickness survey and analysis for port and channel dredging
- ▶ Seabed investigation for offshore wind foundations and pre-construction survey
- ▶ Searching for buried high-value targets: wrecks, debris and lost objects
- ▶ Modular integration on USVs and light to mid-size AUVs / ROVs

Features

- ▶ **Deep penetration from a small head**
Parametric generation gives up to 30 m penetration from a compact transducer, with high-frequency bathymetry and low-frequency profiling in one unit.
- ▶ **One housing, no electronics bottle**
7.5 kg in water and ≤ 100 W average power: the vehicle gives up little payload, power or volume.
- ▶ **Narrow beam, no side lobes**
A $\sim 4.5^\circ \times 4.5^\circ$ primary beam rejects off-axis clutter from trenches and slopes, for ≤ 0.05 m range resolution.
- ▶ **Two depth ratings, one design**
300 m for USV mounting, 2,000 m for AUV / ROV integration; built-in bottom tracking, gain compensation and filtering, digital Ethernet output.

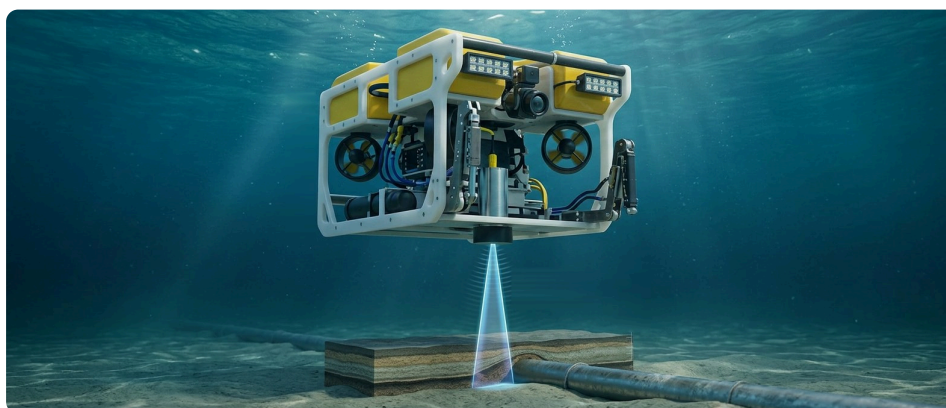
Technical Specifications of GeoScope 2100

Technical Specifications

Primary Frequency	90 – 120 kHz (110 kHz centre)
Secondary Frequency	5 – 25 kHz
Primary Beamwidth	~4.5° × 4.5°
Pulse Length	0.04 – 0.6 ms
Source Level @ Primary Frequency	≥235 dB/μPa@1m 110 kHz
Sediment Penetration	≤30 m (subject to ambient noise and sediment)
Range Resolution	≤0.05 m
Operating Range	≤200 m (water depth)

Physical Specifications

Max. Working Depth	300 m (USV version) / 2,000 m (optional)
Configuration	Transducer and electronics in one housing
Power Supply	220 VAC 50 Hz ±5% via adapter, or 24 VDC input
Average Power Consumption	≤100 W
Communication	Ethernet, PC control
Data Acquisition	128 kSps @ 24-bit
Dynamic Range	≥110 dB
Weight	15 kg in air, 7.5 kg in water
Dimensions	Ø200 mm max. × 306 mm height



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The datasheet may be changed without notification.

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